# MANAGEMENT PLAN AREA OVERVIEW

## Plan Area

The Upper Missouri River Reservoir Management Plan (UMRRFMP) area is comprised of a portion of the Missouri River from Toston Dam, approximately 18 miles south of Townsend, to Holter Dam, approximately 30 miles north of Helena (Figure 1). Two river sections are included in the area: Toston Dam to Canyon Ferry Reservoir and the Hauser Tailrace from Hauser Dam downstream 4.6 miles to Holter Reservoir. Three reservoirs are included in the management area: Canyon Ferry, Hauser, and Holter. The upper Missouri River reservoir system is responsible for about 10% of the statewide fishing pressure (MFWP, Angling Surveys; Figure 2). These reservoirs have historically ranked in the top-20 most fished waters in Montana and Canyon Ferry Reservoir is currently the state's #1 most fished reservoir or lake (MFWP Angler Survey 2017).

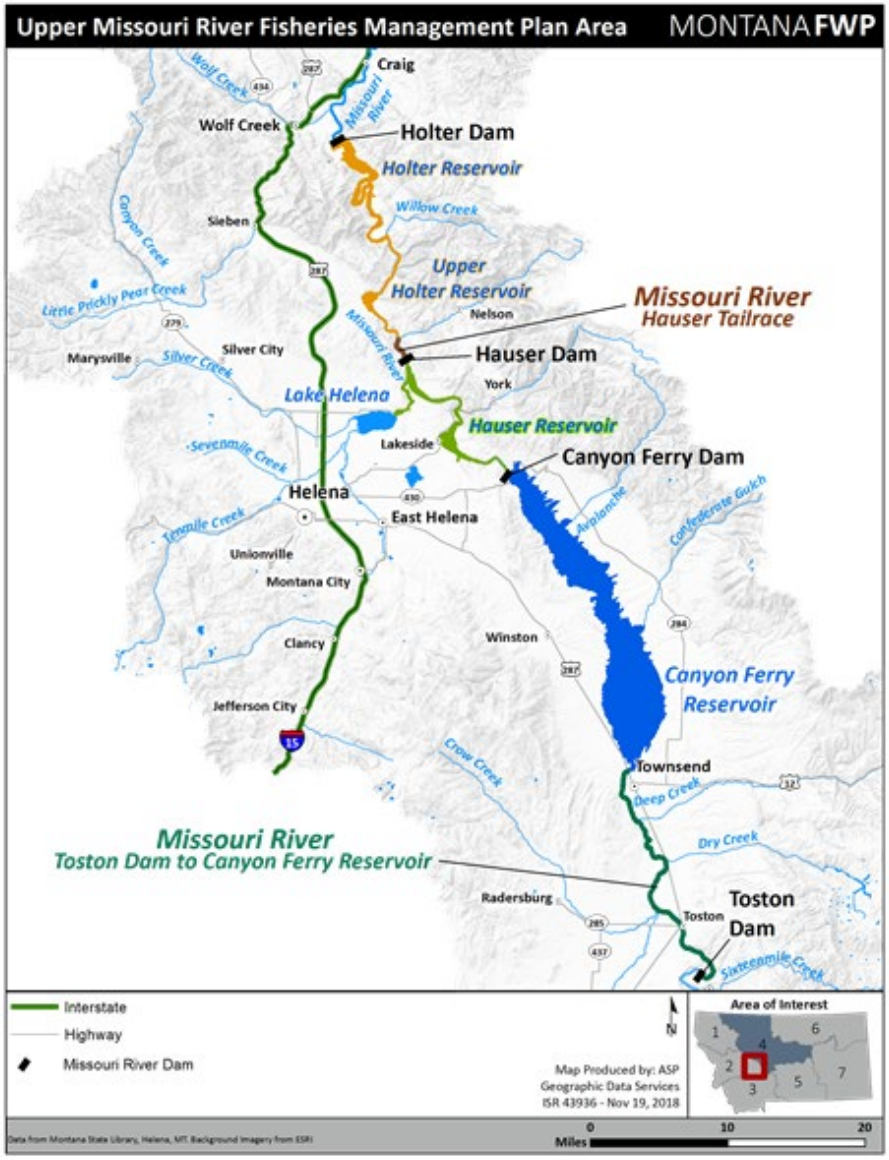


Figure 1. Upper Missouri River Fisheries Management Plan Area.

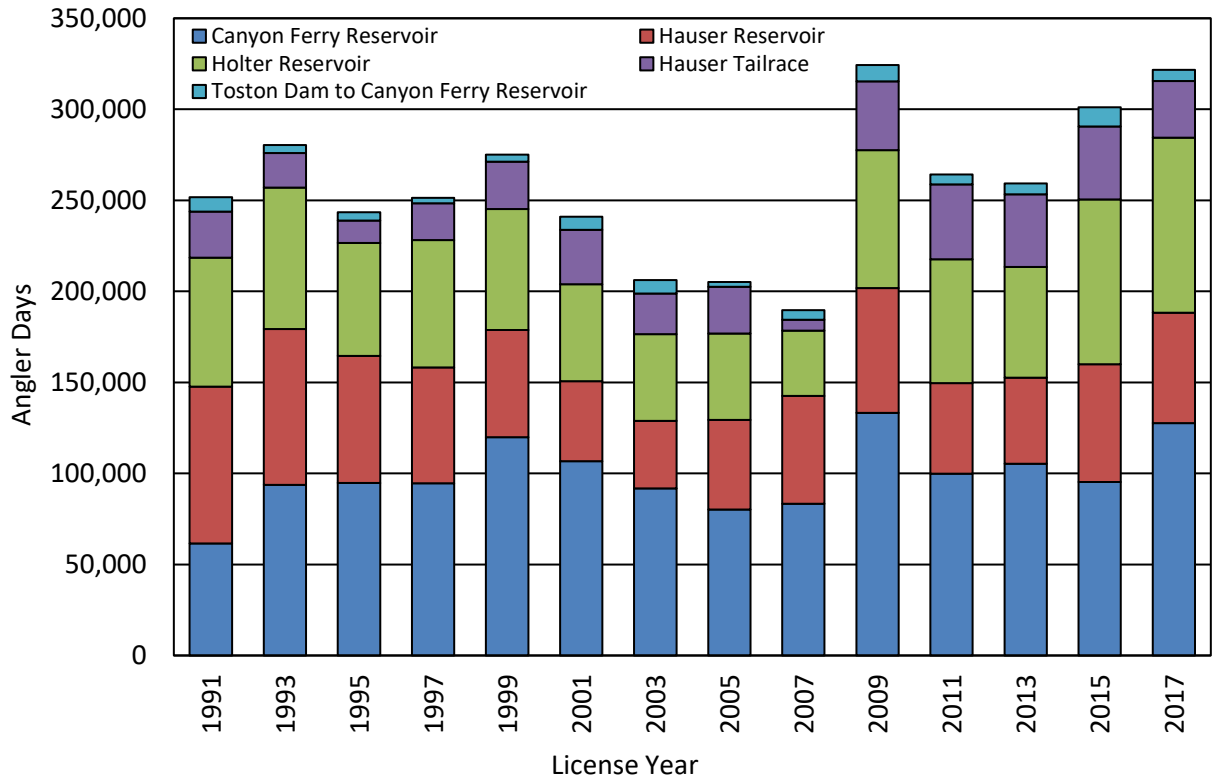


Figure 2. Angler days for Canyon Ferry, Hauser, and Holter Reservoirs and the Missouri River from Toston Dam to Canyon Ferry Reservoir and Hauser Dam to Holter Reservoir (Hauser Tailrace) (MFWP, Angling Surveys).

**River Sections**

The Missouri River from Toston Dam to Canyon Ferry Reservoir has been managed for wild trout since 1973 and includes significant seasonal movement of hatchery origin rainbow trout into the reach from Canyon Ferry Reservoir. Principle game fish in this section are rainbow trout, brown trout, and walleye. The self-sustaining brown trout population largely relies on recruitment of juveniles from Missouri River tributaries upstream of Canyon Ferry Reservoir. Although this reach of river is located downstream from Toston Dam, it does not have characteristics of typical tailwater fisheries because the low head structure (26 feet tall). Toston Dam is 23 miles upstream of Canyon Ferry Reservoir and is a barrier to upstream migrating fish. This reach of the river represents a transition area where cold-water species of fish and invertebrates thrive during average precipitation years or cool/wet years and during dry/warmer summers becomes less suitable for cold-water. Since the Canyon Ferry Reservoir/Missouri River fishery is linked by seasonal fish migrations, management of the river fishery is influenced by reservoir management actions. Despite the influence of Canyon Ferry Reservoir, the Missouri River fishery continues to contain the wide variety of fish species observed in river systems upstream of Toston Dam. Management direction for this section will consider maintaining the current species assemblage.

The other segment of the Missouri River that is included in the UMRRFMP is located between Hauser Dam and Holter Reservoir and is 4.6 miles in length. This segment flows through a narrow, high-walled gorge for most of its length prior to entering upper Holter Lake. Impounded water from Holter Dam greatly influences the lower 1.5 miles of river. Productivity in this river segment is affected by the two upstream reservoirs (Canyon Ferry and Hauser). Deep-water releases from Canyon Ferry Dam and

associated releases from Hauser Dam create typical tailrace conditions where water temperature fluctuations are moderated, and the water is enriched with nutrients. The Missouri River in the Hauser Tailrace provides critical brown and rainbow trout spawning habitat that provides recruitment to the river and Holter Reservoir.

## Reservoir Sections

Canyon Ferry Dam, constructed in 1955, and Reservoir are operated by the U.S. Bureau of Reclamation (BOR) for power production, flood control, irrigation, recreation, and as a municipal water source. Hauser and Holter are the second and third reservoirs downstream of Canyon Ferry (Figure 1). These two reservoirs differ significantly from Canyon Ferry Reservoir in that they are "run-of-the-river" facilities, meaning the same volume of water flowing into the reservoirs is released. Hauser and Holter dams were constructed in 1911 and 1904 for generating electric power and both reservoirs have limited storage capacity. Physical characteristics have been summarized in Table 1.

Table 1. Physical characteristics of Canyon Ferry, Hauser, and Holter Reservoirs.

| Characteristic | Reservoir | | |
|---|---|---|---|
| | Canyon Ferry | Hauser | Holter |
| Ownership | US Bureau of Reclamation | Northwestern Energy | Northwestern Energy |
| Surface Area (acres) | 35,200 | 3,800 | 4,800 |
| Mean Depth (feet) | 58 | 26 | 50 |
| Maximum Depth (feet) | 164 | 70 | 121 |
| Shoreline Length (miles) | 76 miles | 31 miles | 50 miles |
| Age (years) | 65 years | 109 years | 116 years |
| Generating Capacity | 50 megawatts | 17 megawatts | 50 megawatts |
| Drainage Area (square miles) | 15,904 | 16,876 | 17,149 |
| Avg. water retention time (days) | 135 | 8 | 21 |
| Discharge Type<br>Spill gates<br>a) Bottom<br>b) Mid-depth<br>c) Surface<br>Turbines<br>d) Bottom<br>e) Mid-depth<br>f) Surface | <br>River outlet gates: 138 feet<br><br><br>Surface to 31 feet<br><br>Turbine outlet 91 feet | <br>Spill gates – surface (0-14 feet)<br><br><br><br><br>Turbines – 16-32 feet | <br>Spill cap (0-6 feet)<br>Spill gates (6-16 feet)<br><br><br>"Exciter Unit" – 25-29 feet<br>Turbines – 24-32 feet |
| Surface elevation at full pool (feet above sea level) | 3797 feet | 3650 feet | 3578 feet |
| Average annual pool height fluctuation (avg pool height – avg drawdown height) (feet) | 12 feet | 2 feet | 2 feet |

## Fisheries Monitoring

Within the UMRRFMP area, rainbow trout, yellow perch, walleye, brown trout, burbot, kokanee, and northern pike are the species of greatest interest to the public. Species abundance, population structure and ranges for each reservoir and river section are monitored using various standardized sampling methods (Table 2). Long-term standardized population trend surveys are summarized in the tables listed in the Appendix A.

Table 2. Standardized annual population trend surveys throughout the Upper Missouri River Fisheries Management Plan Area.

| **Waterbody** | **Species** | **Method/Timing** |
|---|---|---|
| Canyon Ferry Reservoir | Rainbow Trout | 15 Horizontal Floating Gillnets - October |
| Canyon Ferry Reservoir | Yellow Perch | 33 Horizontal Sinking Gillnets – June and August |
| Canyon Ferry Reservoir | Walleye | 15 Horizontal Sinking Gillnets - September |
| Hauser Reservoir | Rainbow Trout | 11 Horizontal Floating Gillnets - October |
| Hauser Reservoir | Perch and Walleye | 7 Horizontal Sinking Gillnets - October |
| Holter Reservoir | Rainbow Trout | 9 Horizontal Floating Gillnets - October |
| Holter Reservoir | Perch and Walleye | 6 Horizontal Sinking Gillnets - October |
| Missouri River – Toston Section | Rainbow Trout, Brown Trout, and Walleye | Electroshocking annually using Catch Per Unit Effort (CPUE) - Fall |
| Missouri River – Hauser Tailwater Section | Rainbow Trout, Brown Trout, and Walleye | Electroshocking on odd-numbered years using standardized mark-recapture estimate – Fall |

## Management Plan – Past and Present

Parts I and II of this document provide a general description of the upper Missouri River reservoir system and fisheries monitoring protocol. Respective sections on individual waterbodies provide more detailed information on the plan area and fisheries descriptions, past/present management, and proposed management goals and strategies for the next decade.

A more comprehensive, historical perspective (e.g., public involvement, management strategies, etc.) of the upper Missouri River fisheries managed by FWP from Toston Dam to Holter Dam can be found in the Upper Missouri River Reservoirs Fisheries Management Plan, 2010-2019.